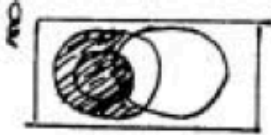




SETS ANSWERS

0606/01/M/J/07

1

<p>1. (i)</p>  <p>(ii) $A \cap B' \cap C$</p> <p>(iii) $(X \cup Y)'$ $X' \cup Y'$</p>  	<p>B1 [1] co</p> <p>B1 [1] co</p> <p>B1 B1 [2] co co.</p>	
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0606/02/O/N/07

2

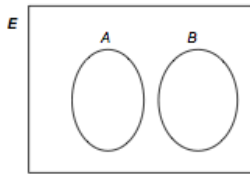
<p>8 [7]</p>	<p>$A : x < 6$</p> <p>$x^2 - 11x + 28 = 0 \Rightarrow (x-4)(x-7) = 0 \Rightarrow x = 4, 7$</p> <p>$B : 4 < x < 7$</p> <p>(i) $4 < x < 6$ (ii) $7 \leq x < 10$</p> <p>If integers used allow sc1 for (i) {5} and sc1 for (ii) {7, 8, 9}</p>	<p>B1</p> <p>M1 A1</p> <p>M1A1 M1A1</p>
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0606/02/M/J/08

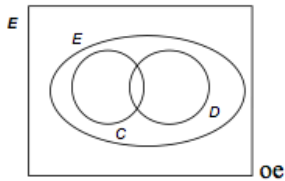
3

2 (a) (i)



B1

(ii)



oe

B1

- (b) $(X \cap Y)' \cup (X' \cap Y)$
 or $(X \cap Y) \cap (X \cup Y)$
 or $(X' \cup Y') \cap (X \cup Y)$
 or $((X \cap Y) \cup (X \cup Y))'$
 or $((X \cap Y) \cap X) \cup ((X \cap Y) \cap Y)$

B2, 1, 0

[4]

0606/01/O/N/08

4

1 (i) correct diagram	B1	
(ii) correct diagram	B1	
(iii) correct diagram	B1	[3]

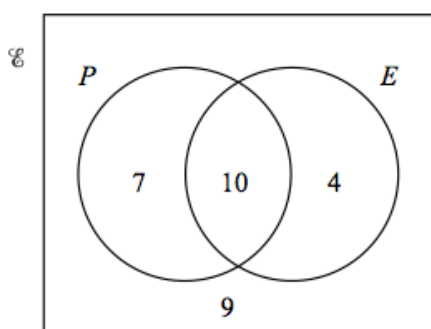
SETS ANSWERS

5 0606/02/M/J/09

1 (a) $(X \cup Y)'$ or $X' \cap Y'$

B1

(b) (i)



B1

(ii) 9

B1

(iii) 11

B1

4

0606/01/O/N/09

6

<p>6 (i) $3x^2 - 10x - 8 = 0$ $(3x + 2)(x - 4) = 0$ critical values $-\frac{2}{3}, 4$ $A = \{x : -\frac{2}{3} \leq x \leq 4\}$</p>	<p>M1 A1 A1 [3]</p>	<p>M1 for attempt to solve quadratic A1 for critical values</p>
<p>(ii) $B = \{x : x \geq 3\}$ $A \cap B = \{x : 3 \leq x \leq 4\}$</p>	<p>B1 B1 [2]</p>	<p>B1 for values of x that define B. B1 for attempt to combine the sets correctly and correct use of notation</p>

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7

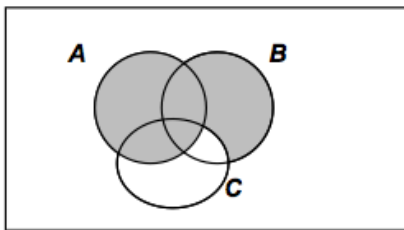
<p>4 (i), (ii) and (iii)</p>	<p>B1 B1 B1 [3]</p>	<p>B1 for each correct Venn diagram</p>
<p>(b) (i) {9,10,11,12,13,14} (ii) {5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20} (iii) \emptyset or { }</p>	<p>B1 B1 B1 [3]</p>	<p>Or equivalent Or equivalent</p>

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8

2 (a)



B1

(b) $X' \cup Y$, $(X \cap Y)'$, $X' \cup (X \cap Y)$,
 $Y \cup (X \cup Y)'$, or $Y \cup (X' \cap Y')$ oe

B1

(c) $18 + 16 + 2 = 30 + x$
6

M1

A1 [4]